

Claims

What is claimed is:

1. A system to facilitate substantially secure communication, comprising:
 - a communication component operative to store an outgoing message received directly from an associated process, the outgoing message including a message key having a key value, an attribute being associated with the communication component, the attribute having a selectable condition that is inaccessible by the associated process; and
 - a filter associated with the communication component, the filter controlling sending the stored outgoing message from the communication component based on the key value of the outgoing message and the attribute condition.
2. The system of claim 1, wherein the communication component further comprises at least one storage device operative to store messages.
3. The system of claim 2, wherein the storage device further comprises at least one queue operative to store messages being sent by the associated process.
4. The system of claim 3 wherein the at least one queue further comprises at least two queues, one of the at least two queues being operative to store messages being sent by the associated process and another of the at least two queues being operative to store messages being sent to the associated process.
5. The system of claim 1, wherein the message key corresponds to a key associated with another communication component that is associated with a desired destination.
6. The system of claim 1, wherein the message key is a multi-bit field for storing data identifying a key associated with a destination communication component.

7. The system of claim 1, wherein the filter is operative to prevent sending the outgoing message from the communication component upon detecting an invalid message key in the outgoing message.

8. The system of claim 7, wherein key data having a range of at least one key value is associated with the communication component, the key data being inaccessible by the associated process, the filter controlling transmission of the outgoing message based on the validation of the message key as a function of the attribute condition and the range of at least one key value.

9. The system of claim 8, wherein the filter employs the attribute to define a valid range of at least one key value based on the at least one key value associated with the communication component, such that the filter provides different control in connection with a message having a message key within the valid range and a message having a message key outside the valid range.

10. The system of claim 9, wherein the key data identifies a plurality of key values.

11. The system of claim 10, wherein the filter is operative to permit whether a message having a message key in the valid range is sent from the communication component.

12. A system to facilitate substantially secure communication between at least two processes, comprising:

a first queue operative to store a request received directly from a first of the at least two processes and, upon validation of the stored request, to send the stored request to a second of the at least two processes, the stored request including a destination address and a key having a key value; and

an interface operative to validate the stored request based on the key value of the stored request relative to at least one predetermined key value associated with the first

queue, the at least one key value associated with the first queue being unavailable to the first process.

13. The system of claim 12, further comprising an attribute associated with the first queue, the attribute defining a valid range of key values based on the at least one key value associated with the first queue to control sending stored requests from the first queue.

14. The system of claim 13, wherein the attribute has a selectable condition that is unavailable to the first process and the valid range of message keys varies as a function of the attribute condition and the at least one key value associated with the first queue.

15. The system of 14 claim wherein the at least one key value associated with the first queue further comprises a plurality of key values associated with the first queue and unavailable to the first process.

16. The system of claim 14, wherein the attribute is set to have one of at least a first condition and a second condition.

17. The system of claim 16, wherein the interface is operative to prevent the stored request from being sent from the first queue if the attribute condition has the first condition and the key has a value that agrees with the at least one key value associated with the first queue.

18. The system of claim 17, wherein the interface is operative to permit the stored request from being sent from the first queue if the attribute condition has the first condition and the key has a value that disagrees with the at least one key value associated with the first queue.

19. The system of claim 16, wherein the interface is operative to prevent the stored request from being sent from the first queue if the attribute condition has the second

condition and the key has a value that agrees with the at least one key value associated with the first queue.

20. The system of claim 12, wherein the interface is operative to prevent sending the request from the first queue if the request includes an invalid key.

21. A system to facilitate substantially secure communication between at least two user-level processes, comprising:

storage means for storing an outgoing message received from a first of the at least two processes, the outgoing message including a message key associated with a destination, an attribute being associated with the storage means, the attribute having a selectable condition unavailable to user-level processes; and

control means for controlling sending of the stored outgoing message from the storage means based on the message key and the attribute condition.

22. The system of claim 21, further comprising validation data associated with the storage means and unavailable to user-level processes, the control means controlling sending of the outgoing message based on the validation of the message key as a function of the attribute and validation data.

23. The system of claim 22, wherein the validation data comprises at least one key value.

24. The system of claim 23, wherein control means is operative to control whether the stored message can be sent from the storage means based on the message key relative to a valid range of key values, which varies as a function of the attribute condition and the validation data.

25. A system to facilitate substantially secure communication between at least two user-level processes, comprising:

storage means for storing a request received directly from a first of the at least two processes and, upon validation of the stored request, for sending the stored request to a second of the at least two processes, the stored request including a key having a key value; and

validation means for validating the stored request based on the key value of the stored request relative to at least one predetermined key value associated with the storage means, the at least one key value associated with the storage means being unavailable to user-level processes.

26. The system of claim 25, further comprising an attribute associated with the storage means, the attribute defining a valid range of key values based on the at least one key value associated with the storage means, the validation means controlling sending stored requests from the storage means according to the valid range of key values.

27. The system of claim 26, wherein the attribute has a selectable condition that is not available to user-level processes, the valid range of key values varying as a function of the attribute condition and the at least one key value associated with the storage means.

28. A computer-readable medium having computer-executable instructions for:
storing in a storage device an outgoing message received directly from an associated user-level process, the outgoing message including a message key having a key value, an attribute being associated with the storage device, the attribute having a selectable condition unavailable to user-level processes; and
controlling sending the stored outgoing message from the communication component based on the key value of the outgoing message and the attribute condition.

29. A computer-readable medium having computer-executable instructions for:
storing a request received directly from a first of at least two user-level processes in a storage device;

upon validation of the stored request, sending the stored request to a second of the at least two processes, the stored request including a key having a key value; and

validating the stored request based on the key value of the stored request relative to at least one predetermined key value associated with the storage device, the at least one key value associated with the storage device being unavailable to user-level processes.

30. A method to facilitate substantially secure communication from a first user-level process in a system in which the first process is operable to communicate directly with hardware, comprising:

storing an outgoing message received directly from the first process in an associated storage device, the outgoing message including a message key having a key value; and

controlling sending of the stored message to a second process based on the value of the message key relative to a predetermined at least one key value associated with the storage device, the at least one key value associated with the storage device being unavailable to the first process.

31. The method of claim 30, further comprising associating an attribute with the storage device that is operable to define a valid range of key values based on the at least one key value associated with the storage device, and controlling sending of the stored message from the storage device based on the message key thereof and the defined valid range of key values.

32. The method of claim 31, wherein the attribute has a selectable condition not available to the first process, the valid range of key values varying as a function of the attribute condition and the at least one key value associated with the storage device.

33. The method of claim 30, further comprising validating the message key relative to the at least one key value associated with the storage device, and, upon detecting

an invalid message key, preventing the stored message from being sent from the storage device.

34. A method to facilitate substantially secure communication from a first user-level process in a system in which the first process is operable to communicate directly with hardware, comprising:

storing an outgoing message received directly from the first process in a storage device associated with the first process, the outgoing message including a message key associated with a destination, an attribute being associated with the storage device, the attribute having a selectable condition being in accessible by user-level processes; and

controlling sending of the stored outgoing message from the storage device based on the message key of the stored outgoing message and the attribute condition of the storage device.